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EXAMINER

AMARI, ALESSANDRO V

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 10/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/832,833

Applicant(s)

AMON ET AL.

Examiner

Alessandro V. Amari

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,13-15 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,13-15 and 17-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 3 and 7 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 3 and 7 recite the limitation of a surface relief holographic grating being formed directly in a molding operation or the surface relief holographic grating molded from the moldable IR transmissive material. However, there is no known method in the art of forming a holographic grating by molding. Holographic gratings are formed by coherent beams of radiation (i.e., laser) forming a pattern of interference in an optical medium.

### ***Claim Objections***

3. Claim 1, 3-6, 7, 13-15 and 17-19 are objected to because of the following informalities:

In regard to claims 1 and 13, line 1, the abbreviation "IR" should be spelled out as "Infrared" and then followed by the abbreviation in parentheses (e.g., (IR)).

In regard to claim 7, line 4, the abbreviation "IR" should be spelled out as "Infrared" and then followed by the abbreviation in parentheses (e.g., (IR)).

In regard to claim 15, line 3, the abbreviation "IR" should be spelled out as "Infrared" and then followed by the abbreviation in parentheses (e.g., (IR)).

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-7 and 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Chipper, U.S. Patent 6,018,414.

In regard to claim 1, Chipper discloses (see Figures 2A and 2B) an IR lens comprising: a first surface (left side of 32); and a second surface (right side of 32), wherein the IR lens is a moldable IR transmissive material as described in column 5, lines 63-67 and column 7, lines 28-29 and at least one surface includes a surface relief holographic grating as described in column 9, lines 40-47.

Regarding claim 3, wherein the surface relief holographic grating is formed directly in a molding operation as described in column 7, lines 28-35 and column 9, lines 40-47, however, it should be noted that if a product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. [*In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966].

Regarding claim 4, Chipper discloses that the moldable IR transmissive material is a chalcogenide glass as described in column 6, lines 12-16.

Regarding claim 6, wherein the lens is manufactured as a unitary structure in a molding operation as described in column 7, lines 28-35 and column 9, lines 40-47, however, it should be noted that if a product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. [*In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966].

In regard to claim 7, Chipper discloses (see Figures 2A and 2B) an IR lens comprising: a first surface (left side of 32); and a second surface (right side of 32), wherein the IR lens is made from a moldable IR transmissive material as described in column 5, lines 63-67 and column 7, lines 28-35 and wherein at least the second surface includes a surface relief holographic grating molded from the moldable IR transmissive material as described in column 5, lines 63-67, column 7, lines 28-35 and column 9, lines 40-47.

In regard to claim 13, Chipper discloses (see Figures 2A and 2B) an IR lens comprising: a first spherical surface (32); and a second nonspherical surface (42), as described in column 6, lines 52-55, wherein the second nonspherical surface comprises a surface relief holographic grating as described in column 9, lines 40-47, wherein the lens is made from a moldable IR transmissive material as described in column 5, lines 63-67, column 7, lines 28-35 and column 9, lines 40-47.

Regarding claim 14, Chipper discloses that the moldable IR transmissive material is a chalcogenide glass as described in column 6, lines 12-16.

In regard to claim 15, Chipper discloses (see Figures 2A and 2B) an infrared imaging optical arrangement comprising: a first lens (32); and a second lens (38), wherein at least the first lens is made from a moldable IR transmissive material as described in column 5, lines 63-67 and column 7, lines 28-35 and wherein at least the first lens has at least one surface including a surface relief holographic grating as described in column 9, lines 40-47.

Regarding claim 17, Chipper discloses that the moldable IR transmissive material is a chalcogenide glass as described in column 6, lines 12-16.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chipper U.S. Patent 6,018,414 in view of Lettington et al. U.S. Patent 4,154,503.

Regarding claims 5, 18 and 19, Chipper teaches the invention as set forth above but does not teach that the moldable IR transmissive material is an arsenic selenide glass.

Regarding claims 5, 18 and 19, Lettington et al. does teach that the moldable IR transmissive material is an arsenic selenide glass as described in column 4, lines 4-30.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize arsenic selenide glass as taught by Lettington et al. in the lens of Chipper in order to form lenses that transmit in the IR range.

***Response to Arguments***

8. Applicant's arguments filed 16 August 2001 have been fully considered but they are not persuasive.

The Applicant argues that the prior art, Chipper does not teach or suggest a lens of a moldable IR transmissive material including a surface holographic grating. The Applicant further argues that the Examiner has improperly applied Chipper's disclosure relating to diffractive lenses of polymer having a kinoform formed by removal of materials to molding of simple aspheric surfaces of lens elements formed of chalcogenide glass.

In response to this argument, The Examiner would like to direct the Applicant's attention to column 7, lines 28-35 of Chipper which states that "the aspheric surfaces of the lens elements may be formed by **press molding** ...". Further, in lines 30-34, Chipper goes on to cite U.S. Patent 5,346,523, which describes a method of molding chalcogenide glass lenses. The Examiner would further direct the Applicant's attention to column 9, lines 40-43 of Chipper which states "Additionally, although the diffractive surfaces are formed as separate lenses in zoom lens assembly 16, it will be understood by those skilled in the art that the diffractive surface can be formed on a second side of a lens element." Therefore, there is a clear teaching that the diffractive lens (i.e.,

surface grating) can be formed on the surface of the IR lens which is made of moldable IR transmissive material (i.e., chalcogenide glass).

The Applicant also argues that Chipper does not disclose that the moldable IR transmissive material is an arsenic selenide glass.

In response to this argument, the Examiner acknowledges that Chipper does not teach that moldable IR transmissive material is an arsenic selenide glass. However, the Examiner has provided a new obviousness rejection (see Lettington et al. U.S. Patent 4,154,503 in regard to those claims.

The Applicant further argues that Chipper does not disclose the lens having a surface relief holographic grating and formed from an arsenic selenide glass manufactured as a unitary structure in a molding operation.

In response to this argument, the Examiner refers Applicant to the response to the first argument above.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (703) 306-0533. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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October 28, 2002



Cassandra Spyrou  
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Technology Center 2800